

CLAIMS:

1. A method of measurement of an evoked neural response comprising the steps of:
 - 5 obtaining a sensed signal representing the evoked neural response from a sensor; passing the obtained sensed signal to a signal input of a high gain amplifier; and altering a reference voltage of the high gain amplifier in order to prevent the high gain amplifier saturating with variations of the sensed signal.
- 10 2. A method according to claim 1 wherein the step of altering the reference voltage is performed during the measurement of the evoked neural response.
3. A method according to claim 1 or claim 2 wherein the step of altering the reference voltage is performed by setting the reference voltage equal to a present value
 - 15 of the sensed signal.
4. A method according to claim 3 wherein the setting of the reference voltage equal to a present value of the sensed signal is undertaken by a sample-and-hold circuit having an input from the sensed signal.
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5. A method according to claim 3 or claim 4 further comprising the step of setting the reference voltage of the high gain amplifier equal to the present value of the sensed signal at the commencement of every sample period.
- 25 6. A method according to claim 6 further comprising the step of integrating samples derived at the output of the high gain amplifier to obtain a continuous waveform representing the amplified sensed signal.
7. A method according to any one of claims 1 to 6 wherein the step of obtaining
 - 30 the sensed signal comprises obtaining a sensed signal of the neural response of an auditory nerve.
8. A method according to claim 7 wherein the step of obtaining the sensed signal of the neural response of the auditory nerve uses one or more electrodes of an electrode
 - 35 array of a cochlear implant.

9. A device for measuring an evoked neural response, the device comprising:
a sensor for obtaining a sensed signal representing the evoked neural response;
a high gain amplifier having a signal input for receiving the sensed signal, and
having a reference input; and
5 means for altering a reference voltage at the reference input of the high gain
amplifier in order to prevent the high gain amplifier saturating with variations of the
sensed signal.
10. A device according to claim 9 wherein the reference voltage is altered during the
10 measurement of the evoked neural response.
11. A device according to claim 10 wherein the reference voltage is altered by
setting the reference voltage equal to a present value of the sensed signal.
- 15 12. A device according to claim 11 further comprising a sample-and-hold circuit
having an input from the sensed signal, said sample-and-hold circuit setting of the
reference voltage equal to a present value of the sensed signal.
13. A device according to claim 12 wherein the reference voltage of the high gain
20 amplifier is set equal to the present value of the sensed signal at the commencement of
every sample period.
14. A device according to claim 13 wherein samples derived at the output of the
high gain amplifier are integrated to obtain a continuous waveform representing the
25 amplified sensed signal.
15. A device according to any one of claims 9 to 14 wherein the obtained sensed
signal is of the neural response of an auditory nerve.
- 30 16. A device according to claim 15 wherein the sensor comprising one or more
electrodes of an electrode array of an implanted portion of a cochlear implant for
obtaining the sensed signal.
17. A device according to any one of claims 9 to 16 comprising a cochlear implant.
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18. A method of measurement of an evoked neural response comprising the steps of:
- obtaining a sensed signal representing the evoked neural response from a sensor;
 - passing the obtained sensed signal to a signal input of a high gain amplifier; and
 - 5 setting a reference voltage of the high gain amplifier equal to a present value of the sensed signal in order to prevent the high gain amplifier saturating with variations of the sensed signal.
19. A device for measuring an evoked neural response, the device comprising:
- 10 a sensor for obtaining a sensed signal representing the evoked neural response;
 - a high gain amplifier having a signal input for receiving the sensed signal, and having a reference input; and
 - means for setting a reference voltage at the reference input of the high gain amplifier equal to a present value of the sensed signal in order to prevent the high gain
 - 15 amplifier saturating with variations of the sensed signal.